

From: Michael Chao
To: BangJeong Tae
Date: Thursday, May 12, 2011 12:00 AM
Subject: Re: Puxi Extended Essay student

Hi Jeong Tae,

It's nice to hear from you directly -- I'm always happy when students take on the challenge of a math EE, and to hear about their ideas.

As you know, it is permitted to write a math EE that is historical in nature, though the essay will be assessed through the lens of mathematics. You probably have this already, but I have attached the portion of the IB EE guide that addresses math.

The history of e strikes me as less focused than your earlier idea about the use of complex numbers in digital signal processing, but I can see that it might be more accessible as well. My first suggestion for this topic would be to think of it more as a "biography" of e , rather than a history. I don't think there would be any particular reason with this topic to set chronological boundaries. Have you read any of the general interest books about π ? Those might give you an idea of how your essay might be structured in terms of math content vs chronology.

In terms of demonstrating your understanding, there are a couple things you should be consider:

~expanding on the results as presented in your sources, for example, with detailed examples that you create, and

~for this topic, making connections between different areas of math.

However, with regard to the second point, you don't just want to submit a laundry list of different facts you discover -- that likely won't have depth that you are looking for. If you discover that a particular connection is leading you to a lot of mathematically rich ideas, then you might consider focusing on that connection.

I realize that this is fairly general, but I hope it's helpful. It's a little hard for me to be more specific without knowing what you have done -- do you have something in a document that I could look at?

Best regards,

Mr. Chao

Michael Chao

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>>> BangJeong Tae <jeongtaebang@hotmail.com> 05/07/11 11:30 AM >>>
Hi Mr. Chao,

This is Jeong Tae Bang, SAS Puxi junior student writing a math EE.

I first want to thank you for helping me out. I really needed some sort of guidance in terms of writing the paper.

I'm thinking about writing a math history paper; math and history are my favorite subjects.

I want to write about the history of 'e', the natural constant.

I have identified the origins of 'e' (Napier and compound interest), but I can't decide where to stop.

I know where to start, so where would a good time in the history of 'e' to stop? What would be a good parameter that will make the spectrum of research adequate, not too broad nor too specific?

Another question I have is about writing the paper itself.

I'm not clear of what I should aim for in a math history paper?

I know I'm not supposed to just narrate history and copy famous theorems/proofs on my paper..

How do I demonstrate understanding and mathematical depth?

In other words, what should be the aim of my paper be? To explain? analyze? or evaluate? This is the part that confuses me the most.

Again, thank you for your help Mr. Chao

Sincerely,

Jeong Tae Bang